DOCUMENT RESUME

ED 156 946 CG 012 535

AUTHOR Logan, Henrietta; And Others
TITLE Patient Anxiety Reduction Through Mediated Role Modeling in a Dental Setting.
PUB DATE [76]
NOTE 9p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Anxiety; Behavior Patterns; Dental Evaluation; *Dentistry; Desensitization; *Modeling (Psychological); *Patients (Persons); Psychological Patterns; Research Projects; *Role Models; *Video Tape Recordings
IDENTIFIERS *State Trait Anxiety Inventory

ABSTRACT

This investigation was conducted to determine the effect of video-taped role modeling on patient-reported level of anxiety at the beginning of dental treatment and the long term effects of the modeling tape as evidenced by appointment cancellations and failure rate. Subjects completed the state portion of the State-Trait Anxiety Inventory (STAI) to establish base line data and were then randomly assigned to one of three conditions: (1) role modeling video-tape; (2) travelogue video-tape; and (3) control group. Posttreatment measures of state anxiety and perceptions of feeling relaxed were analyzed using an analysis of variance. Statistically significant differences in favor of the modeling tape were obtained. (Author)

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ED156946

PATIENT ANXIETY REDUCTION THROUGH MEDIATED ROLE MODELING IN A DENTAL SETTING

HENRIETTA LOGAN, Ph.D.
RICHARD SHERIDAN, M.A.
DEREK WILLARD, Ph.D.

UNIVERSITY OF IOWA

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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CG012535

Patient Anxiety Reduction Through Mediated
Role Modeling In A Dental Setting

HENRIETTA LOGAN, Ph.D.
RICHARD SHERIDAN, M.A.
DEREK WILLARD, Ph.D.
THOMAS GARDNER, D.D.S.

University of Iowa

OBJECTIVES

This investigation was conducted for the purpose of determining the effect of video-taped role modeling on patient reported level of anxiety at the beginning of dental treatment.

PERSPECTIVE

To individuals dealing with persons needing dental treatment, the presence of dental fear and its impact on oral health care is clear and largely uncontested (Kleinknecht and Bernstein, 1976). Though not the sole reason for individuals failing to seek dental care, Freidson and Feldman (1958) conducted a national survey and found that approximately five million persons listed fear as the primary reason for avoiding dentists. Prior research has shown that even for patients seeking dental care, anxiety or fear is a common emotion. Mere observation provides affirmation of this fact. Kleinknecht and Bernstein (1973) found that high fear patients were twice as likely to cancel a dental appointment as those patients reporting little fear. It, therefore, seems reasonable that by reducing patient anxiety, one might significantly lessen cancellations of scheduled appointments in a dental setting.

Shaw and Thorenson (1974) found that social modeling through the film medium was effective in reducing dental phobia and resulted in persons seeking dental care. Other researchers in non-dental settings have found that presenting visual representations of fear producing situations can cause a reduction in anxiety and avoidance behavior (Bandura, Blanchard and Ritter 1969, Meichenbaum and Cameron, 1974).

Therefore, it seemed that through examining the relationship between viewing a modeling tape, a placebo tape and patient-reported anxiety level, an ameliorative approach could be identified that would assist counselors and dental personnel in their efforts with clients exhibiting avoidance behavior in seeking dental treatment.

The present investigation constitutes a pilot study of the impact of mediated role modeling on patient self reporting anxiety at the time of an initial visit to the dental clinic.

METHODS

Approximately 100 patients visiting the dental clinic for the first time were randomly assigned to one of three groups: modeling video tape of the admissions process, a placebo tape consisting of a travelogue, or a pre-posttest control group. Each patient filled out the state portion of the State-Trait Anxiety Inventory (STAI) to establish initial anxiety level upon arrival. The Trait portion was not used because of clinical time constraints. The reliability coefficient for this measure is .9 (test-retest method) and a correlation coefficient of $\sim$ .8 has been obtained with three other scales, the IPAT Anxiety Scale, the Taylor Manifest Anxiety Scale, and the Welch Anxiety Scale (Speilberger, Gorsuch and Lushene, 1970). The patients viewed the video tapes individually in similar rooms in the dental clinic. The two tapes were the same length, approximately ten minutes. Following viewing of one of the video tapes or a corresponding wait in the reception area by the patients in the control group, the posttest was administered. Three specific areas were used as criterion variables: 1) the level of anxiety reported on the state portion of STAI, 2) the patient's perception of whether the time being spent prior to the appointment was helping him/her to relax, and 3) the patient's recommendation about future viewing of tapes by other patients. The last measure was used only with the two video tape treatment groups.

DATA SOURCE

Subjects were new patients to the Dental Clinics of the College of Dentistry and represented an age spread of 18 to 73. Both male and female subjects constituted the sample, most subjects were representative of midwest middle and lower SES.

RESULTS AND CONCLUSIONS

Analysis of variance was used to analyze the state anxiety data with all comparisons being preplanned. No statistically significant difference existed among the three treatment groups on the pretest measure, further assuring the randomness of the group assignment. Analysis of the state anxiety posttest results yielded an F-Value of 3.56 with a P=.03. (See Table 1) Subsequent analysis revealed no significant difference between the modeling and placebo tape with a significant difference existing between those two and the control group data.

Table 1

POSTTEST MEANS ON STATE ANXIETY

Modeling Tape			Placebo Tape (Travelogue)			Control		
N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
26	*40.8	15.3	29	*38.2	15.8	28	*49.6	19.1

* Higher score indicates greater level of self reported anxiety

ANALYSIS OF VARIANCE

Source	Df	Sum of Squares	Mean Squares	F-ratio	P
Model	2	2021.45	1010.72	3.56	.03
Error	80	22728.57	284.107		

At the time of the posttest we asked all subjects to agree or disagree on a six point Likert scale with the following statement, "I feel the time I am spending before my examination is helping me to relax". (See Table 2) The analysis of this data revealed an F-Value of 2.49 and a P=.08. Although this only approached significance, we did observe a trend in which the modeling group reported the strongest agreement with this statement on a six point Likert scale, the placebo group next and the control group the least agreement.

Table 2

POSTTEST MEANS ON RELAXATION ITEM

Modeling			Placebo (travelogue)			Control		
N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
31	2.7	1.3	34	2.8	1.4	34	3.4	1.1

Analysis of Variance

Source	DF	Sum of Squares	Mean Squares	F Value	P
Model	2	8.8	4.4	2.49	.08
Error	96	171.111	1.78		

One final question was asked of the two groups viewing the video tape only. "I would recommend that other patients view this tape while waiting for their appointment to begin." (See Table 3) The mean for those individuals viewing the modeling tape was 1.62 and the mean for those viewing the placebo tape was 2.4 indicating that those people viewing the modeling tape more strongly agreed with the statement than did those viewing the placebo tape. A T-test was used to analyze this data yielding a value of 3.22 which was significant at the P=.002.

Table 3

T Test for Recommending Viewing of Video Tape

	N	X	S.D.	T	Df	P
Modeling	32	1.6	.8	-3.207	63	.0021
Placebo	33	2.4	1.1			

It is interesting to note that both video tapes, the modeling tape and the travelogue seem to be equally effective in affecting patient state anxiety prior to the screening examination. It is also interesting to note that even though the two treatment groups were not statistically different the group viewing the modeling tape responded more positively in recommending this tape for other patients than did those viewing the travelogue. This is consistent with the experimenters' observation. The data collected on whether or not the time they were spending before their appointment was helping them to relax was also revealing. Although it was not significant at a P=.05. level, it certainly was in the expected direction with the individuals viewing the modeling tape indicating the greater level of agreement than did those viewing either the placebo tape or the control who waited in the reception area. It further suggests that the potential for modeling in a dental setting is great and is one that should be pursued further. The information collected on cancellation and failures did not prove conclusively

that the modeling tape assisted or hindered patients in working through the dental treatment. This may have been as a result of some problems in collecting the data. Numerous clinical areas were involved in gathering the information and we strongly suspect the data may not have been as accurate as we would have liked. We found no age by anxiety interaction possibly because of our skewed population.

The results from this pilot study are heartening to those of us involved with dental patient management. It is our intention to extend the scope of our present study by using mediated role modeling in some of the areas where patients exhibit more anxiety and experience more discomfort and also a higher cancellation and failure rate commonly exists. (At this point we will have better control over our data collection on the cancellation variable.) Plans for this study are currently underway. Results of this study are being used in making other decisions about the development of additional video tapes for patient education and/or motivations.

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